

What is claimed is:

1. A device for treatment of mitral annulus dilatation, comprising an elongate body having such dimensions as to be insertable into the coronary sinus and having two states, in a first of which the elongate body has a shape that is adaptable to the shape of the coronary sinus, and to the second of which the elongate body is transferable from said first state assuming a reduced radius of curvature, whereby the radius of curvature of the coronary sinus is reduced as well as the circumference of the mitral valve annulus, when the elongate body is positioned in the coronary sinus, said elongate body comprising a distal stent section, a proximal stent section and control wires for reducing the distance between the distal and proximal stent sections.

2. The device of claim 1, wherein said control wires comprise a first wire and means for guiding said first wire in a course extending two times between the distal and proximal stent sections, when the distance therebetween is at a maximum, and extending at least three times between the distal and proximal stent sections, when the distance therebetween is at a minimum.

3. The device of claim 2, wherein said guiding means
25 comprises a first eyelet fixed to one of the distal and

proximal stent sections, a second eyelet fixed to the other of the distal and proximal stent sections, and a third eyelet positioned between the distal and proximal stent sections, said first wire having a first end fixed 5 to said one of the distal and proximal stent section and extending therefrom via the third eyelet, the first eyelet and the second eyelet back to the third eyelet where a second end of the first wire is fixed.

4. The device of claim 3, wherein said first eyelet 10 is fixed to the distal stent section and said control wires comprise a second wire extending through the third eyelet and as a double wire proximally therefrom out of the coronary sinus and out of the human body.

5. The device of claim 4, wherein said control wires 15 comprise a third wire extending through the third eyelet and as a double wire distally to and through the first eyelet and then as a double wire proximally therefrom out of the coronary sinus and out of the human body.

6. The device of claim 3, wherein said first eyelet 20 is fixed to the proximal stent section and said control wires comprise a second wire extending through the third eyelet and as a double wire distally to and through the first eyelet and then as a double wire proximally therefrom out of the coronary sinus and out of the human 25 body.

7. The device of claim 6, wherein said control wires comprise a third wire extending through the third eyelet and as a double wire proximally therefrom out of the coronary sinus and out of the human body.

5 8. The device of claim 4, wherein said first eyelet is fixed to the distal stent section and said control wires comprise a single wire having an end releasably fixed to the third eyelet and extending proximally therefrom out of the coronary sinus.

10 9. The device of claim 3, wherein said first wire from the first eyelet extends at least once more via the third eyelet and the first eyelet before finally extending via the second eyelet back to the third eyelet where the second end of the first wire is fixed.

15 10. The device of claim 1, wherein the wires extend between the stent sections in courses offset radially from a longitudinal axis of the stent sections.

11. The device of claim 1, wherein a cover encloses the wires in their courses between the distal and proximal stent sections.

20 12. The device of claim 11, wherein the cover comprises one or more plastic sheaths.

13. The device of claim 11, wherein the cover comprises one or more helical wires.

14. A device for treatment of mitral annulus

dilatation, comprising an elongate body having such dimensions as to be insertable into the coronary sinus and having two states, in a first of which the elongate body has a shape that is adaptable to the shape of the coronary sinus, and to the second of which the elongate body is transferable from said first state assuming a reduced radius of curvature, whereby the radius of curvature of the coronary sinus is reduced as well as the circumference of the mitral valve annulus, when the elongate body is positioned in the coronary sinus, said elongate body comprising at least one stent section at a distance from each end of the elongate body, said stent section providing a reduction of its length when expanded in situ in the coronary sinus, whereby the elongate body is shortened and bent to a smaller radius of curvature.

15. The device of claim 14, wherein the elongate body comprises a distal stent section, a proximal stent section and a central stent section, the distal and proximal stent sections being expandable prior to the central stent section.

16. The device of claim 15, wherein the distal and proximal stent sections are expandable without substantial length reduction.

17. The device of claim 14, wherein a memory material is used as stent material.

18. A method of reducing the circumference of the mitral valve annulus, comprising

5 providing an elongate body having a proximal stent
section, a distal stent section and means for reducing
the distance therebetween,

inserting the elongate body into the coronary sinus
in the vicinity of the posterior leaflet of the mitral
10 valve,

fixing the positions of the proximal and distal stents relative to the coronary sinus, and

reducing the distance between the proximal and distal stent sections of the elongate body.

15 19. The method of claim 18, wherein the distance
between the proximal and distal stent sections is reduced
by means of wires.

20. The method of claim 18, wherein the distance
between the proximal and distal stent sections is reduced
20 by means of a central stent section, the length of which
is reduced when it is expanded.